



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/893,963

06/29/2001

Young Tae Yang

8733.441.00

6103

30827 7590 04/20/2007
MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

NORRIS, JEREMY C

ART UNIT

PAPER NUMBER

2841

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

04/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/893,963

Applicant(s)

YANG ET AL.

Examiner

Jeremy C. Norris

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/06, 12/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 6-13, 18-22, 25, 26, and 33-35 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,607,147 (Ono).

Ono discloses, referring primarily to figure 3, a flexible circuit film for connecting external circuits, comprising: an L-shaped body; a first pad (17a) provided at one end of the body to be adhesively connected to a pad of a first printed circuit board, a second pad (14) provided at other end of the body to be engaged to a connector of a second printed circuit board and electrically connected to the first pad (via traces 17); and least one force absorbing edge recess (near reference character 20) defined in the body that absorbs a force transferred from the second pad [claim 1] wherein the recess is defined in the body in a region adjacent to second pad [claim 2], wherein the body has at least one bent portion [claim 4], wherein a first recess (19) is defined at the bent portion and said at least one recess is defined in the body in a region adjacent to the second pad [claim 6], wherein said at least one recess is defined at the bent portion [claim 7], wherein said at least one recess has a substantially concave shape [claim 8] wherein the at least one recess has a substantially curved shape [claim 9], wherein the body having at least two side surfaces wherein the at least one recess is defined at a region

Art Unit: 2841

adjacent to the bent portion [claim 22], wherein the one recess includes a cutout portion [claim 25].

Similarly, Ono discloses a flexible printed circuit film for connecting external circuits, comprising, an L-shaped body having a first portion (12) and a second portion (11) the first portion intersecting the second portion to form a corner portion (10), the corner portion having an inner vertex and an outer vertex; a first pad (17a) connected at an end of the first portion; a second pad (14) connected at an end of the second portion and electrically connected to the first pad (via traces 17); and a first force absorbing recess (near reference 20) in the body that absorbs a force transferred from the second pad [claim 10], wherein the first recess has a substantially concave shape [claim 11], wherein the first recess has a substantially curved shape [claim 12], wherein the first portion is substantially perpendicular to the second portion [claim 13], wherein the first recess includes a cutout portion [claim 26].

Alternately, Ono discloses a flexible printed circuit film for connecting external circuits, comprising, an L-shaped body having a first portion (12) and a second portion (11) the first portion intersecting the second portion to form a corner portion (10), the corner portion having an inner vertex and an outer vertex; a first pad (17a) connected at an end of the first portion; a second pad (14) connected at an end of the second portion and electrically connected to the first pad (via traces 17); and a first force absorbing recess (19) in the body that absorbs a force transferred from the second pad [claim 10], wherein the first recess has a substantially concave shape [claim 11], wherein the first recess has a substantially curved shape [claim 12], wherein the first portion is

Art Unit: 2841

substantially perpendicular to the second portion [claim 13], wherein the first recess (top 19 as seen in the figure) is at a region between the inner vertex and the second pad [claim 18], further comprising a second recess (bottom 19 as seen in the figure) in a region between the outer vertex of the corner portion and the second pad [claim 19], wherein the second recess has a substantially concave shape [claim 20], wherein the second recess has a substantially curved shape [claim 21], wherein the first recess includes a cutout portion [claim 26], wherein the second recess has a substantially curved shape [claim 33].

Additionally, Ono discloses, discloses, a printed circuit film for connecting external circuits comprising: a body having a first portion (12) and a second portion (11); a first pad connected to the first portion (17a); a second pad (14) connected to the second portion and electrically connected to the first pad (via traces 17); and at least one recess portion (19) in the body that absorbs a force transferred from the second pad [claim 34], wherein the recess portion includes a cutout portion [claim 35].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 2841

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 5, 14-17, 23, 24, 27, 28, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono in view of US 5,777,275 (Mizutani).

Regarding claim 3, Ono discloses the claimed invention as described above except Ono does not specifically disclose wherein the recess is defined in at least two side surfaces of the body in the region adjacent to the second pad [claim 3]. However, Mizutani teaches adding a recess (3c) into two side surfaces of a flexible circuit (figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to place a recess at the inner vertex of the invention of Ono as taught by Mizutani. The motivation for doing so would have been to reduce bending strain (col. 4, lines 15-45).

Art Unit: 2841

Regarding claim 5, Ono discloses the claimed invention as described above except Ono does not specifically disclose that the body having at least two side surfaces wherein the at least one recess is defined at each of the at least two side surfaces in a region adjacent to the bent portion [claim 5]. However, Mizutani teaches adding a recess (3c) into two side surfaces of a flexible circuit (figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to place a recess at the inner vertex of the invention of Ono as taught by Mizutani. The motivation for doing so would have been to reduce bending strain (col. 4, lines 15-45).

Similarly to improve the invention of Ono as described with respect to claim 1, Mizutani teaches adding a recess (3c) into two side surfaces of a flexible circuit (figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to place a recess at the inner vertex of the invention of Ono as taught by Mizutani. The motivation for doing so would have been to reduce bending strain (col. 4, lines 15-45). Moreover, the modified invention of Ono teaches wherein the concave shape is greater than a semicircle [claim 23], wherein the concave shape has a shape of an incomplete circle [claim 24].

Additionally, to improve the invention of Ono as described with respect to claims 10 and 11, Mizutani teaches adding a recess (3c) into two side surfaces of a flexible circuit (figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to place a recess at the inner vertex of the invention of Ono as taught by Mizutani. The motivation for doing so would have been to

Art Unit: 2841

reduce bending strain (col. 4, lines 15-45). Moreover, the modified invention of Ono teaches, wherein the first recess is at a region between the inner vertex and the second pad [claim 18], further comprising a second recess (bottom 19) in a region of the second portion of the body, the region being between the outer vertex of the corner portion and the second pad [claim 19], wherein the concave shape is greater than a semicircle [claim 27], wherein the concave shape has a shape of an incomplete circle [claim 28], wherein the concave shape is greater than a semicircle [claim 31], wherein the concave shape has a shape of an incomplete circle [claim 32].

Regarding claim 14, Ono discloses the claimed invention as described above except Ono does not specifically disclose wherein the first recess is at the inner vertex of the corner portion [claim 14]. However, Mizutani teaches adding a recess (3c) into two side surfaces of a flexible circuit (figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to place a recess at the inner vertex of the invention of Ono as taught by Mizutani. The motivation for doing so would have been to reduce bending strain (col. 4, lines 15-45).

Furthermore, the modified invention of Ono teaches further comprising a second recess (19) in a region of the second portion of the body, the region being between the outer vertex of the corner portion and the second pad [claim 15], wherein the second recess has a substantially concave shape [claim 16], wherein the second recess has a substantially curved shape [claim 17],

Response to Arguments

Applicant's arguments with respect to claims 1-35 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

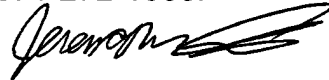
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Monday - Friday, 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2841

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeremy C. Norris
Patent Examiner - Technology
Center 2800
Art Unit 2841

JCSN